

# **FIBER OPTIC RECEIVER WITH AN ADJUSTABLE RESPONSE PREAMPLIFIER**

## **ABSTRACT**

A fiber optic receiver that includes an opto-electronic transducer, an adjustable response preamplifier circuit, and a post-amplifier circuit is described. The opto-electronic transducer is configured to generate an electrical data signal in response to a received optical data signal. The adjustable response preamplifier circuit is coupled to the opto-electronic transducer and is operable to amplify an electrical data signal generated by the opto-electronic transducer. The post-amplifier circuit is coupled to an output of the preamplifier circuit and is configured to transmit a mode control signal to the preamplifier circuit in response to a received control signal. By transmitting the mode control signal from the post-amplifier to the preamplifier, the adjustable response amplifier may be placed in the preamplifier stage within a receiver optical sub-assembly (ROSA). As a result, the fiber optic receiver may accommodate multiple operating modes (e.g., multiple bandwidth and power operating modes) while conforming to existing receiver optical sub-assembly (ROSA) size and pin count constraints.